

CEMVN-ED-F

JUL 29 2017

MEMORANDUM FOR Chief, Operation Division (CEMVN-OD-W/Amy Powell)

SUBJECT: 2017 Annual (Operations and Maintenance) Compliance Inspection for Orleans Levee District – New Orleans East Bank (St. Bernard Subbasin) (OLD3)

1. Please find Engineering Division's input for the subject routine levee inspection (Encl).
2. The supporting documentation from the limited field inspection has been assembled in a format that should accommodate your needs in preparing the Continuing Eligibility Inspection Report. This documentation is based upon the limited visual observations by experienced design personnel. Engineering analyses were not performed and project documents were not evaluated.
3. Based on team observations from the 2017 routine inspection, an overall rating of Minimally Acceptable was given for the levee system/segment which is maintained by Orleans Levee District (OLD) and the Southeast Louisiana Flood Protection Authority - East (SLFPA-E). The deficiencies and recommendations presented in this report should be reviewed and utilized in scheduling SLFPA-E's routine maintenance activities and developing a plan to correct the deficiencies presented in this report. Failure to comply with the recommendations laid out in this inspection report and SLFPA-E's plan for corrective actions within the next year could result in an Unacceptable Rating in 2018.
4. The basis for the Minimally Acceptable (M) rating for this levee system/segment is due to "M" rating(s) for rated item(s) contained in this report and for rating deficiencies described in Section G of the general instructions for the Flood Damage Reduction Segment/System Inspection Report. The predominant deficiencies observed were erosions, broken slope pavement, foundations of concrete structures, and culverts requiring inspection. Historic seepage locations were also noted for monitoring during future high water events.
5. This inspection rating represents the U.S. Army Corps of Engineers' (USACE) evaluation of operations and maintenance of this flood damage risk reduction system and may be used in conjunction with other information for a levee system evaluation for the National Flood Insurance Program (NFIP). Due to the Minimally Acceptable rating for this year's routine inspection, it is recommended that SLFPA-E

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evaluate the potential impacts of this rating to the levee system's FEMA accreditation, if applicable. A Minimally Acceptable USACE inspection rating alone does not equate to an FEMA accredited levee for the NFIP.

6. POC is David McFadden, x2902.

Encl



MARK L. WOODWARD, P.E.  
Geotechnical Branch  
Levee Safety Program Manager



JEAN S. VOSSEN, P.E.  
Chief, Engineering Division  
Levee Safety Officer

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WOODWARD CEMVN-ED-F <u>MM</u>
PINNER CEMVN-ED-F <u>PBP</u>
BECK CEMVN-ED-L <u>PAB</u>
GAYHEART CEMVN-ED-T <u>KG</u>
VOSSEN CEMVN-ED <u>JK</u>



US Army Corps of Engineers

# Flood Damage Reduction Segment / System Inspection Report

Name of Segment / System : Orleans LD - New Orleans East Bank (St Bernard Subbasin) (OLD3)  
 Public Sponsor(s): Southeast Louisiana Flood Protection Authority - East  
 Public Sponsor Representative: Robert Turner - Regional Director  
 Sponsor Phone: 504 262-8902  
 Sponsor Email: rturner@slfpa.com  
 Corps of Engineers Inspector: David McFadden, Heather Achord, George Krausser Inspection Start Date: 03/14/2017  
 Inspection End Date: 03/14/2017  
 Inspection Report Prepared By: David McFadden Date Report Prepared: 04/03/2017  
 Internal Technical Review (For Periodic Inspection) Prepared By: Mark Woodward, P.E. Date of ITR: 4/30/17  
 Final Approved By: Jean Vossen, P.E. Date Approved: 7/20/17

Type of Inspection:  Initial Inspection Eligibility  Continuing Eligibility Inspection (Routine)  Continuing Eligibility Inspection (Periodic)

Contents of Report:  Instructions  Initial Eligibility Inspection  General Items for All Flood Control Works  Levee Embankment  Floodwalls  Interior Drainage System  Pump Stations  FDR System Channels

Overall Segment/System Rating:  Acceptable  Minimally Acceptable  Unacceptable

The annual Continuing Eligibility (Routine) Inspection for the Orleans LD - New Orleans East Bank (St Bernard Subbasin) was conducted on May 14, 2017. Based on team observations from the 2017 routine inspection, an overall rating of the levee systems and segments for which the Southeast Louisiana Flood Protection Authority - East (SLFPA-E) has maintenance responsibility has been classified as Minimally Acceptable.

The deficiencies and recommendations presented in this report should be reviewed and utilized in SLFPA-E's routine maintenance activities and developing a plan to correct the deficiencies presented in this report. Failure to comply with the recommendations laid out in this inspection report and SLFPA-E's plan for corrective actions within the next year could result in an Unacceptable rating in 2018.

The basis for the Minimally Acceptable (M) rating for this levee system/segment is due to "M" rating for rated items contained in this report and the rating deficiencies described in Section G of the general instructions for the Flood Damage Reduction Segment-System Inspection Report. Maps at the end of this report show the area covered and the inspection points collected during the 2017 inspection. The predominant deficiencies observed were erosions, broken slope pavement, foundations of concrete structures, and culverts requiring inspection. Historic seepage locations were also noted for monitoring during future high water events.

This inspection rating represents the U.S. Army Corps of Engineers' (USACE) evaluation of operations and maintenance of this flood damage risk reduction system and may be used in conjunction with other information for a levee system evaluation for the National Flood Insurance Program (NFIP). Due to the Minimally Acceptable rating for this year's routine inspection, it is recommended that SLFPA-E evaluate the potential impacts of this rating to the levee system's FEMA accreditation, if applicable. A Minimally Acceptable USACE inspection rating alone does not equate to an FEMA accredited levee for the NFIP.



US Army Corps of Engineers®

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Public Sponsor(s): Southeast Louisiana Flood Protection Authority - East

Public Sponsor Representative: Robert Turner - Regional Director

Sponsor Phone: 504 262-8902

Sponsor Email: rturner@slfpae.com

Corps of Engineers Inspector: David McFadden, Heather Achord, George Krausser Inspection Start Date: 03/14/2017

Inspection Report Prepared By: David McFadden Inspection End Date: 03/14/2017

Internal Technical Review (For Periodic Inspection) Prepared By: Mark Woodward, P.E. Date Report Prepared: 04/03/2017

Final Approved By: Jean Vossen, P.E. Date of ITR: -

Date Approved: -

Type of Inspection:  Initial Inspection Eligibility Overall Segment/System Rating:  Acceptable

Continuing Eligibility Inspection (Routine)  Minimally Acceptable

Continuing Eligibility Inspection (Periodic)  Unacceptable

Contents of Report:  Instructions

Initial Eligibility Inspection

General Items for All Flood Control Works

Levee Embankment

Floodwalls

Interior Drainage System

Pump Stations

FDR System Channels

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## General Instructions for the Inspection of Flood Damage Reduction Segments / Systems

**A. Purpose of USACE Inspections:**

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

**B. Types of Inspections:**

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	Periodic Inspections
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

**C. Inspection Boundaries:**

Inspections should be conducted so as to rate each Flood Damage Reduction "Segment" of the system. The overall system rating will be the lowest segment rating in the system.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

**D. Land Use Definitions:**

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

**E. Use of the Inspection Report Template:**

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled "Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.

**F. Individual Item / Component Ratings:**

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

<b>Acceptable Item</b>	<b>Minimally Acceptable Item</b>	<b>Unacceptable Item</b>
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

**G. Overall Segment / System Ratings:**

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

<b>Acceptable System</b>	<b>Minimally Acceptable System</b>	<b>Unacceptable System</b>
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the segment / system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the segment / system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years

**H. Eligibility for PL84-99 Rehabilitation Assistance:**

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

<b>If the Overall System Rating is Acceptable</b>	<b>If the Overall System Rating is Minimally Acceptable</b>	<b>If the Overall System Rating is Unacceptable</b>
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become Inactive in the RIP.	The system is Inactive in the RIP, and the status will remain Inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.



**I. Reporting:**

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

- a. All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
- b. Photos of the general system condition and noted deficiencies.
- c. A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
- d. The relative importance of the identified maintenance issues should be specified in the transmittal letter.
- e. If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made Inactive in the Rehabilitation Inspection Program.

**J. Notification:**

Reports are to be disseminated as follows within 30 days of the inspection date.

<b>If the Overall System Rating is Acceptable</b>	<b>If the Overall System Rating is Minimally Acceptable</b>	<b>If the Overall System Rating is Unacceptable</b>
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.

# Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
01. Unwanted Vegetation Growth <sup>1</sup>	<b>A</b>	A The levee has little or no unwanted vegetation (trees, bush, or undesirable weeds), except for vegetation that is properly contained and/or situated on overbuilt sections, such that the mandatory 3-foot root-free zone is preserved around the levee profile. The levee has been recently mowed. The vegetation-free zone extends 15 feet from both the landside and riverside toes of the levee to the centerline of the tree. If the levee access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 or Corps policy for regional vegetation variance.	
		M Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the levee.	
		U Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above and must to be removed to reestablish or ascertain levee integrity.	
02. Sod Cover	<b>A</b>	A There is good coverage of sod over the levee.	
		M Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the levee embankment. This may be the result of over-grazing or feeding on the levee, unauthorized vehicular traffic, chemical or insect problems, or burning during inappropriate seasons.	
		U Over 50% of the sod cover is missing or damaged over a significant portion or portions of the levee embankment.	
		N/A Surface protection is provided by other means.	
03. Encroachments	<b>A</b>	A No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the levee.	
		M Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the levee.	
04. Closure Structures (Stop Log, Earthen)	<b>NA</b>	A Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction



# Levee Embankments

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Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
Closures, Gates, or Sandbag Closures) (A or U only)			procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.
		N/A	There are no closure structures along this component of the FDR system.
05. Slope Stability	<b>A</b>	A	No slides, sloughs, tension cracking, slope depressions, or bulges are present.
		M	Minor slope stability problems that do not pose an immediate threat to the levee embankment.
		U	Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the levee embankment.
06. Erosion/ Bank Caving	<b>M</b>	A	No erosion or bank caving is observed on the landward or riverward sides of the levee that might endanger its stability.
		M	There are areas where minor erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.
07. Settlement <sup>2</sup>	<b>A</b>	A	No observed depressions in crown. Records exist and indicate no unexplained historical changes.
		M	Minor irregularities that do not threaten integrity of levee. Records are incomplete or inclusive.
		U	Obvious variations in elevation over significant reaches. No records exist or records indicate that design elevation is compromised.
08. Depressions/ Rutting	<b>A</b>	A	There are scattered, shallow ruts, pot holes, or other depressions on the levee that are unrelated to levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.
		M	There are some infrequent minor depressions less than 6 inches deep in the levee crown, embankment, or access roads that will pond water.
		U	There are depressions greater than 6 inches deep that will pond water.

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# Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
09. Cracking	<b>A</b>	A	Minor longitudinal, transverse, or desiccation cracks with no vertical movement along the crack. No cracks extend continuously through the levee crest.
		M	Longitudinal and/or transverse cracks up to 6 inches in depth with no vertical movement along the crack. No cracks extend continuously through the levee crest. Longitudinal cracks are no longer than the height of the levee.
		U	Cracks exceed 6 inches in depth. Longitudinal cracks are longer than the height of the levee and/or exhibit vertical movement along the crack. Transverse cracks extend through the entire levee width.
10. Animal Control	<b>A</b>	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in of existing burrows.
		M	The existing animal burrow control program needs to be improved. Several burrows are present which may lead to seepage or slope stability problems, and they require immediate attention.
		U	Animal burrow control program is not effective or is nonexistent. Significant maintenance is required to fill existing burrows, and the levee will not provide reliable flood protection until this maintenance is complete.
11. Culverts/ Discharge Pipes (This item includes both concrete and corrugated metal pipes.) <sup>3</sup>	<b>M</b>	A	There are no breaks, holes, cracks in the discharge pipes/ culverts that would result in significant water leakage. The pipe shape is still essentially circular. All joints appear to be closed and the soil tight. Corrugated metal pipes, if present, are in good condition with 100% of the original coating still in place (either asphalt or galvanizing) or have been relined with appropriate material, which is still in good condition. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.
		M	There are a small number of corrosion pinholes or cracks that could leak water and need to be repaired, but the entire length of pipe is still structurally sound and is not in danger of collapsing. Pipe shape may be ovalized in some locations but does not appear to be approaching a curvature reversal. A limited number of joints may have opened and soil loss may be beginning. Any open joints should be repaired prior to the next inspection. Corrugated metal pipes, if present, may be showing corrosion and pinholes but there are no areas with total section loss. Condition of pipes has been verified using television camera video taping or visual inspection methods within the past five years, and the report for every pipe is available for review by the inspector.
		U	Culvert has deterioration and/or has significant leakage; it is in danger of collapsing or as already begun to collapse. Corrugated metal pipes have suffered 100% section loss in the invert. <b>HOWEVER:</b> Even if pipes appear to be in good condition, as judged by an external visual inspection, an Unacceptable Rating will be assigned if the condition of pipes has
			<i>Culverts through the levee and floodwall require visual/ video inspection for verification of pipe conditions. Video inspections have not been conducted within the required 5 year frequency. A list of culverts and drainage structures is attached to this report. SLFPA-E should provide a plan for the culvert inspections by Dec 31, 2017.</i>

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		not been verified using television camera video taping or visual inspection methods within the past five years, and reports for all pipes are not available for review by the inspector.	
		N/A There are no discharge pipes/ culverts.	
12. Riprap Revetments & Bank Protection	NA	A No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
		M Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
		N/A There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
13. Revetments other than Riprap	M	A Existing revetment protection is properly maintained, undamaged, and clearly visible.	USACE_CEMVN_OLD3_2017_a_0006: Station_1 667+39: The slope paving is crumbling at the head of the wharf. This location has rip rap and sandbags placed from previous flood events but has begun to erode again. Sandbags have deteriorated. SLFPA-E should coordinate with wharf owner to make repairs under wharf and add temporary repair (rocks or sandbags) as needed. (M)
		M Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
		U Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
		N/A There are no such revetments protecting this feature of the system.	
14. Underseepage Relief Wells/ Toe Drainage Systems	NA	A Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance	

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Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
		records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.	
		M Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.	
		U Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.	
		N/A There are no relief wells/ toe drainage systems along this component of the FDR system.	
15. Seepage	<b>M</b>	A No evidence or history of unrepaired seepage, saturated areas, or boils.	USACE_CEMVN_OLD3_2017_a_0007: Station_1 665+09: Area of historic seepage noted during previous high water events. SLFPA-E should monitor location during future high river events.
		M Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.	
		U Evidence or history of active seepage, extensive saturated areas, or boils.	

<sup>1</sup> If there is significant growth on the levee that inhibits the inspection of animal burrows or other items, the inspection should be ended until this item is corrected.

<sup>2</sup> Detailed survey elevations are normally required during Periodic Inspections, and whenever there are obvious visual settlements.

<sup>3</sup> The decision on whether or not USACE inspectors should enter a pipe to perform a detailed inspection must be made at the USACE District level. This decision should be made in conjunction with the District Safety Office, as pipes may be considered confined spaces. This decision should record observations with a video camera in order that the condition of the entire pipe, including all joints can later be assessed. Additionally, the video record provides a baseline to which future inspections can be compared.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction



## Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems



**Inspect ID:** USACE\_CEMVN\_OLD3\_2017\_a\_0005

**Title:** USACE\_CEMVN\_OLD3\_2017\_a\_0005\_1.jpg

**Rated Item:** 06. Erosion/ Bank Caving

**Rating:** M

**Inspection Remarks:** Erosion on flood side levee slope.

**Recommended Action:** SLFPA-E should monitor the erosion and make corrective actions as required.

**Caption:**

**Station 1:** 685+86 (OLD)



**Inspect ID:** USACE\_CEMVN\_OLD3\_2017\_a\_0006

**Title:** USACE\_CEMVN\_OLD3\_2017\_a\_0006\_1.jpg

**Rated Item:** 13. Revetments other than Riprap

**Rating:** M

**Inspection Remarks:** The slope paving is crumbling at the head of the wharf. This location has rip rap and sandbags placed from previous flood events but has begun to erode again. Sandbags have deteriorated.

**Recommended Action:** SLFPA-E should coordinate with wharf owner to make repairs under wharf and add temporary repair (rocks or sandbags) as needed.

**Caption:**

**Station 1:** 667+39 (OLD)

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## Levee Embankments

For use during Initial and Continuing Eligibility Inspections of levee segments / systems



**Inspect ID:** USACE\_CEMVN\_OLD3\_2017\_a\_0006

**Title:** USACE\_CEMVN\_OLD3\_2017\_a\_0006\_2.jpg

**Rated Item:** 13. Revetments other than Riprap

**Rating:** M

**Inspection Remarks:** The slope paving is crumbling at the head of the wharf. This location has rip rap and sandbags placed from previous flood events but has begun to erode again. Sandbags have deteriorated.

**Recommended Action:** SLFPA-E should coordinate with wharf owner to make repairs under wharf and add temporary repair (rocks or sandbags) as needed.

**Caption:**

**Station 1:** 667+39 (OLD)

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction



# Floodwalls

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
01. Unwanted Vegetation Growth <sup>1</sup>	<b>A</b>	A	A grass-only or paved zone is maintained on both sides of the floodwall, free of all trees, brush, and undesirable weeds. The vegetation-free zone extends 15 feet from both the land and riverside of the floodwall, at ground-level, to the centerline of the tree. Additionally, an 8-foot root-free zone is maintained around the entire structure, including the floodwall toe, heel, and any toe-drains. If the floodwall access easement doesn't extend to the described limits, then the vegetation-free zone must be maintained to the easement limits. Reference EM 1110-2-301 and/or Corps policy for regional vegetation variance.
		M	Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present within the zones described above. This vegetation must be removed but does not currently threaten the operation or integrity of the floodwall.
		U	Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present within the zones described above. This vegetation threatens the operation or integrity of the floodwall and must be removed.
02. Encroachments	<b>A</b>	A	No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the floodwall.
		M	Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.
		U	Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the floodwall.
03. Closure Structures (Stop Log Closures and Gates) (A or U only)	<b>A</b>	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components are clearly marked and installation instructions/ procedures readily available. Trial erections have been accomplished in accordance with the O&M Manual.
		U	Any of the following issues is cause for this rating: Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within the anticipated warning time. The storage vaults cannot be opened during the time of inspection. Components of closure are not clearly marked and installation instructions/ procedures are not readily available. Trial erections have not been accomplished in accordance with the O&M Manual.
		N/A	There are no closure structures along this component of the FDR system.

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# Floodwalls

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
04. Concrete Surfaces	<b>A</b>	A	Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.
		U	Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.
05. Tilting, Sliding or Settlement of Concrete Structures	<b>A</b>	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.
06. Foundation of Concrete Structures	<b>M</b>	A	No active erosion, scouring, or bank caving that might endanger the structure's stability.
		M	There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheetpile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stable until the next inspection.
		U	Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheetpile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.
			USACE_CEMVN_OLD3_2017_a_0003: Station_1 10+95: Erosion of bankline near floodwall at Claiborne Ave. SLFPA-E should monitor the erosion and notify USACE if conditions worsen. (M)

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

# Floodwalls

For use during Initial and Continuing Eligibility Inspections of levee segments / systems

Rated Item	Rating	Rating Guidelines	Locations/Remarks/Recommendations
07. Monolith Joints	<b>NA</b>	A	The joint material is in good condition. The exterior joint sealant is intact and cracking/desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.
		M	The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/ thaw cycles, and to ensure water tightness of the joint.
		U	The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.
		N/A	There are no monolith joints in the floodwall.
08. Underseepage Relief Wells/ Toe Drainage Systems	<b>NA</b>	A	Toe drainage systems and pressure relief wells necessary for maintaining FDR system stability during high water functioned properly during the last flood event and no sediment is observed in horizontal system (if applicable). Nothing is observed which would indicate that the drainage systems won't function properly during the next flood, and maintenance records indicate regular cleaning. Wells have been pumped tested within the past 5 years and documentation is provided.
		M	Toe drainage systems or pressure relief wells are damaged and may become clogged if they are not repaired. Maintenance records are incomplete or indicate irregular cleaning and pump testing.
		U	Toe drainage systems or pressure relief wells necessary for maintaining FDR system stability during flood events have fallen into disrepair or have become clogged. No maintenance records. No documentation of the required pump testing.
		N/A	There are no relief wells/ toe drainage systems along this component of the FDR system.
09. Seepage	<b>A</b>	A	No evidence or history of unrepaired seepage, saturated areas, or boils.
		M	Evidence or history of minor unrepaired seepage or small saturated areas at or beyond the landside toe but not on the landward slope of levee. No evidence of soil transport.
		U	Evidence or history of active seepage, extensive saturated areas, or boils.

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## Floodwalls

For use during Initial and Continuing Eligibility Inspections of levee segments / systems



**Inspect ID:** USACE\_CEMVN\_OLD3\_2017\_a\_0003

**Title:** USACE\_CEMVN\_OLD3\_2017\_a\_0003\_1.jpg

**Rated Item:** 06. Foundation of Concrete Structures

**Rating:** M

**Inspection Remarks:** Erosion of bankline near floodwall at Claiborne Ave.

**Recommended Action:** SLFPA-E should monitor the erosion and notify USACE if conditions worsen.

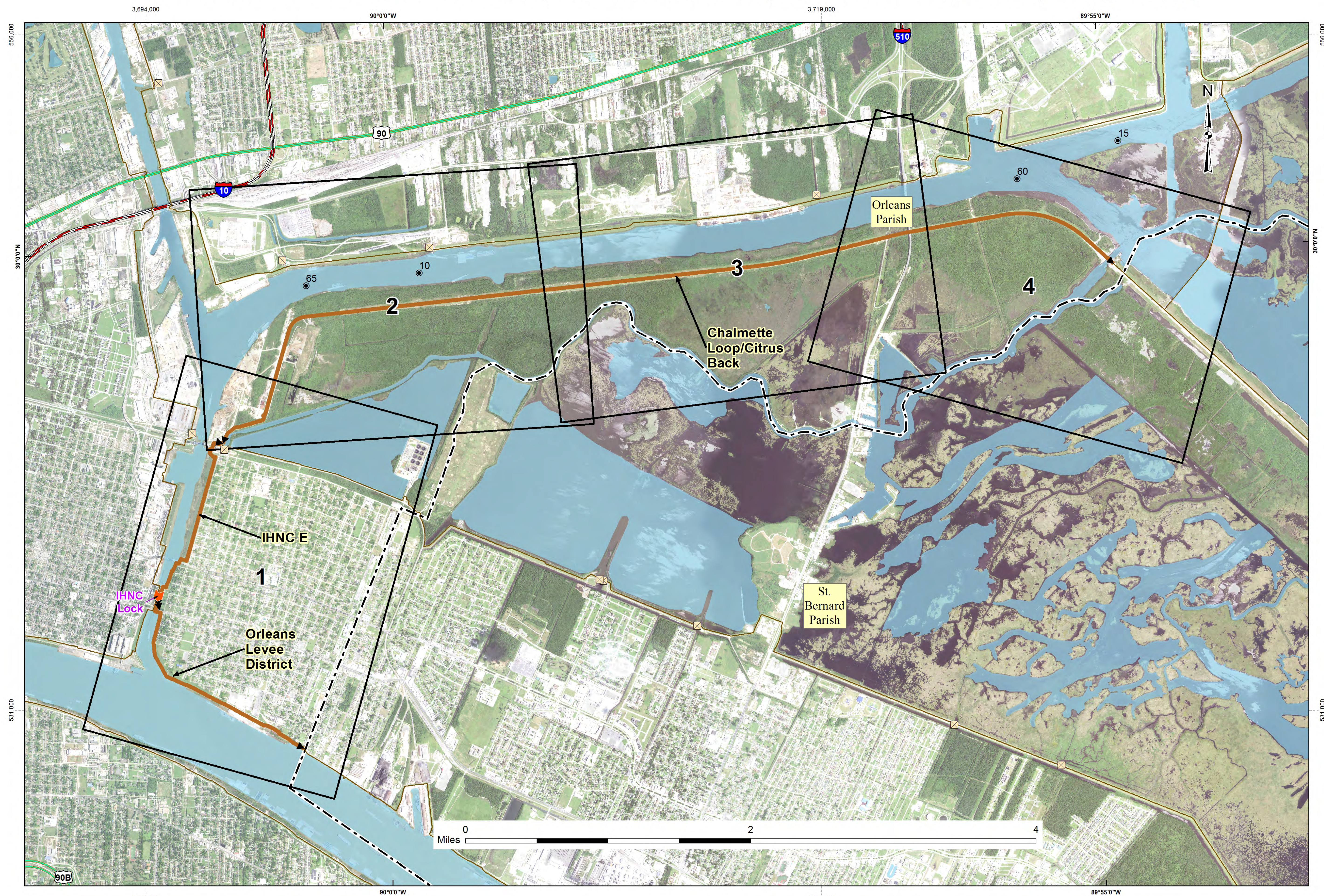
**Caption:**

**Station 1:** 10+95 (IHNCE)

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GRAVITY__1	STATION	DRAIN_DESCRIPTION	INLET_INVE	OUTLET _INV	DRAIN_D IAM	PIPE_CONST	DRAIN _GATE	FC_SEGME_1
V 25	904.2	FULL OF WATER UNABLE TO ATTRIBUTE	0	0	0			OLD3
V 23	79710.3	NO ACCESS TO INLET INVERT	0	1.319	12	Steel		OLD3
V 24	292	NO ACCESS TO INLET INVERT	0	1.132	12	Steel		OLD3

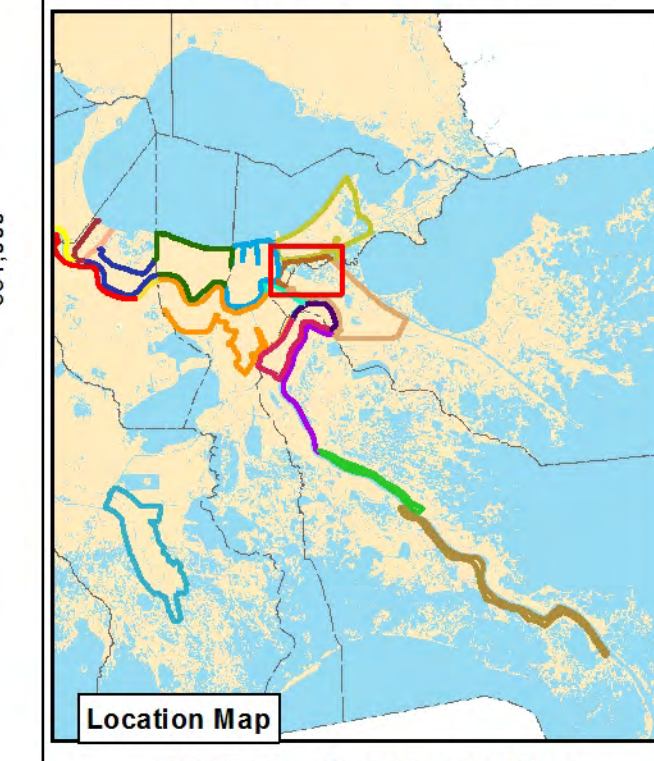
# Orleans LD - New Orleans East Bank (St Bernard Subbasin) 2017 routine inspection (OLD3\_2017\_a)



- Legend**
- Flood Control Segments**
- ◀▶ Flood Control Segments
  - 🔒 Lock
  - 🏗️ Pump Station
  - 🏗️ Interim Control Structure
  - 🏗️ Federal Water Control Structure
  - 🏗️ Sector Gate
  - 🏗️ Channel Floodgate
  - 🏗️ Weir
  - 🏗️ Control Structure
  - 🏗️ Diversion Structure
  - 🏗️ Drainage Structure
  - 🏗️ Navigable Structure
  - ▭ Parishes Boundary
  - 📍 River Miles

Notes:  
 Inside Plan Area grid based on Louisiana State Plane System, South Zone North American Datum 983 shown by dashed ticks. Geographic Projection shown by solid ticks.

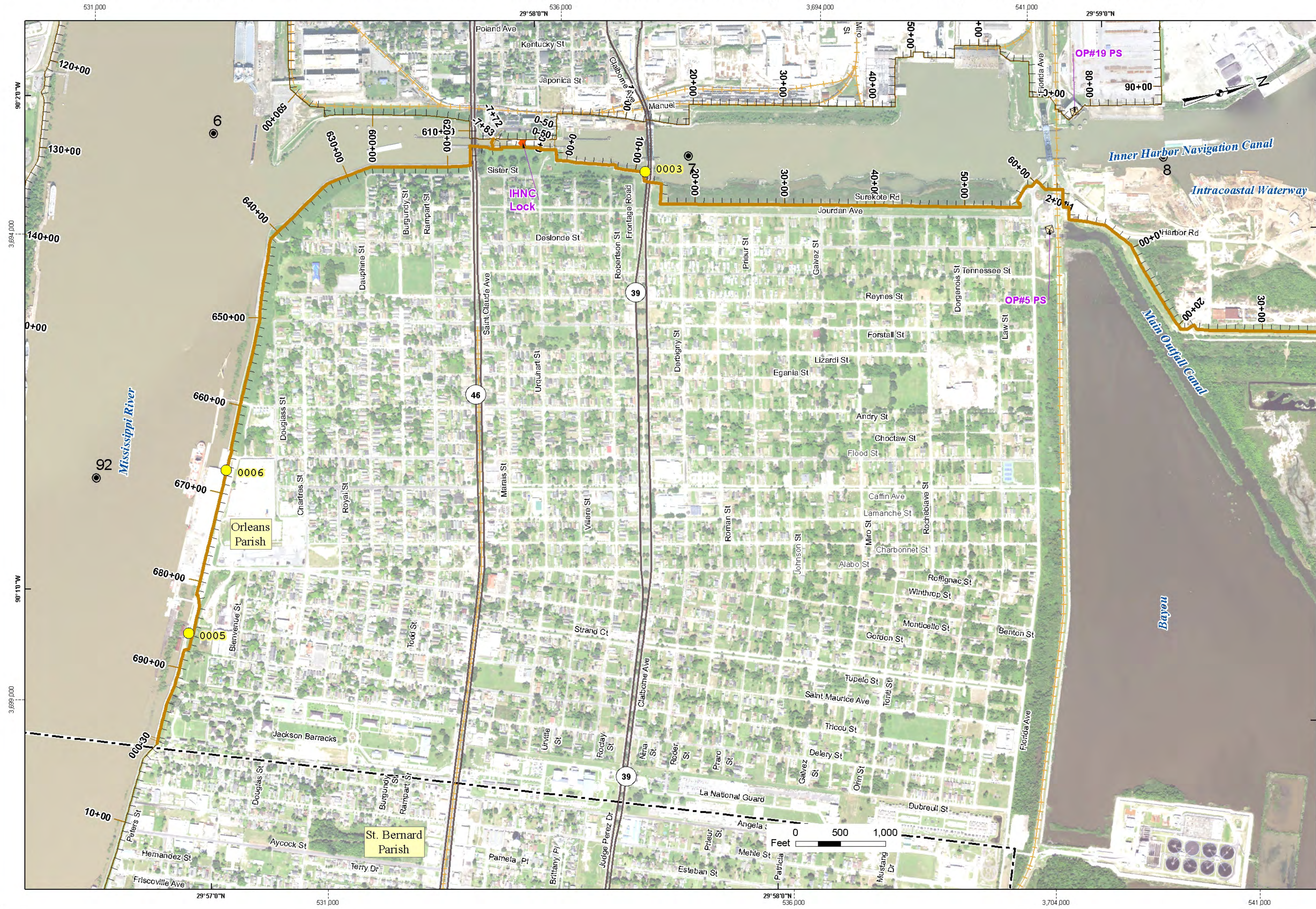
Last Modified : 2/9/2017



**O&M Routine Inspection**

OLD3 - Orleans LD -  
 New Orleans East Bank  
 (St Bernard Subbasin)

# Orleans LD - New Orleans East Bank (St Bernard Subbasin) 2017 routine inspection (OLD3\_2017\_a)



**Legend**

**Flood Control Segments**

- OLD3

**Inspection Points**

INSPECTION\_RATING

- <Null>
- U
- M
- A
- NA

**Inspection Lines**

INSPECTION\_RATING

- <Null>
- U
- M
- A
- NA

- Lock
- Pump Station
- Interim Control Structure
- Federal Water Control Structure
- Sector Gate
- Channel Floodgate
- Weir
- Control Structure
- Diversion Structure
- Drainage Structure
- Navigable Structure

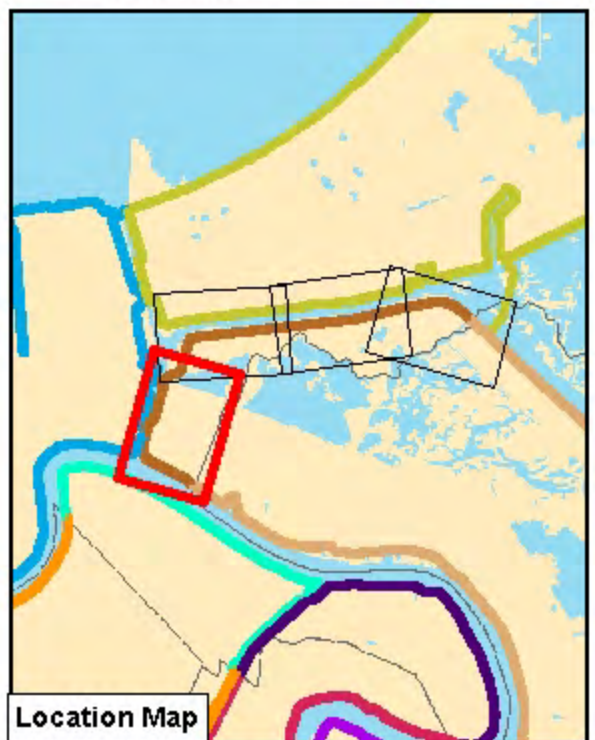
**Parishes Boundary**

- River Miles

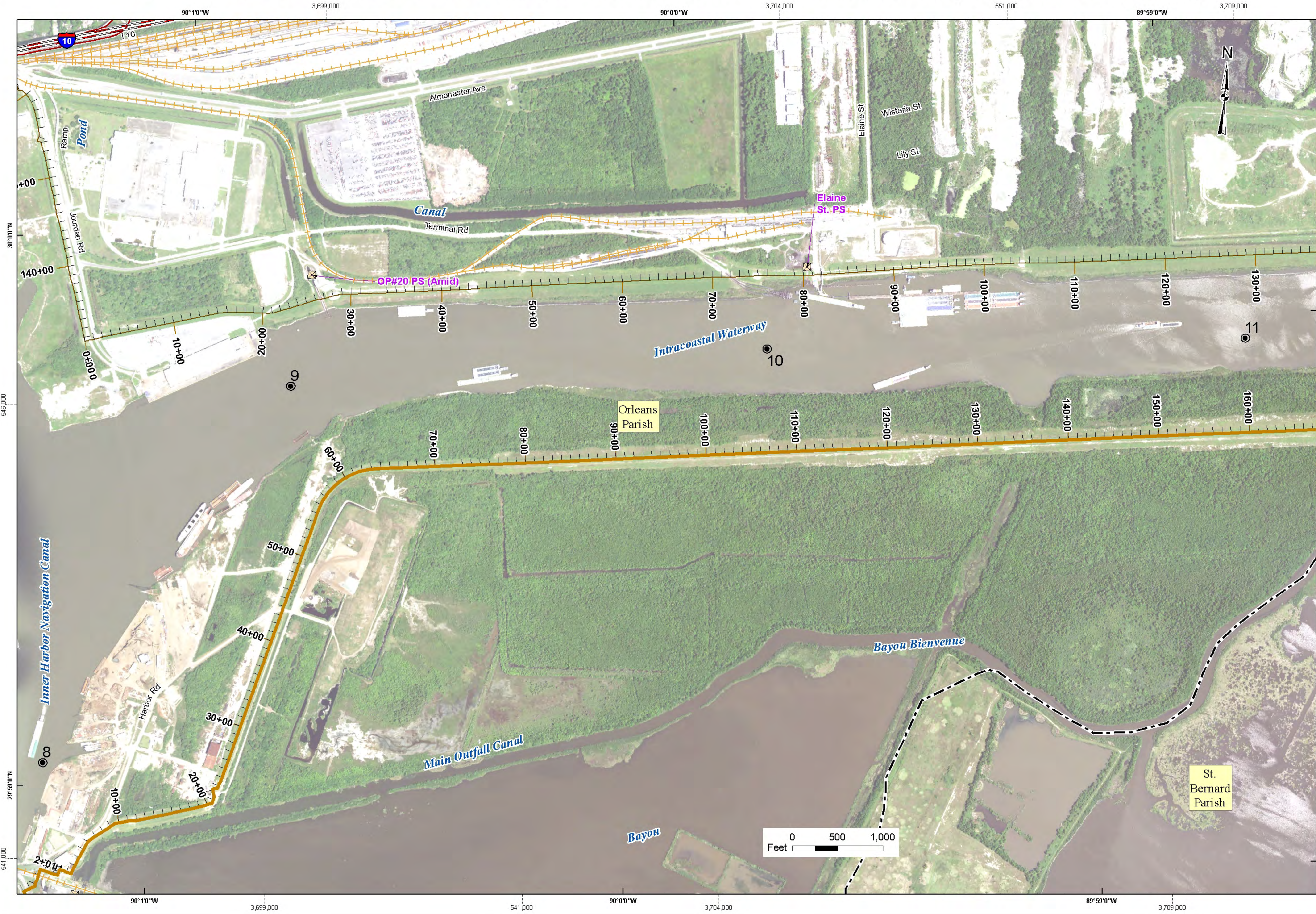
Note:  
 The labels for inspection features display an abbreviated version of the Inspect\_ID site identifier from the Levee Inspection Report. For example, if the Inspect\_ID site identifier is USAACE\_CEMVN\_PLQ5\_2013\_a\_0001 and the feature type is point, that point will be labeled as "0001" on the map series for PLQ5 2013 cycle "a" inspection. If the Inspect\_ID site identifier is USAACE\_CEMVN\_PLQ5\_2013\_a\_0002 and the feature type is line, that line will be labeled as "L0002" on the map series for PLQ5 2013 cycle "a" inspection.

Notes:  
 Inside Plan Area grid based on Louisiana State Plane System, South Zone North American Datum 1983 shown by dashed ticks. Geographic Projection shown by solid ticks.

Last Modified : 7/7/2017



# Orleans LD - New Orleans East Bank (St Bernard Subbasin) 2017 routine inspection (OLD3\_2017\_a)



**Legend**

**Flood Control Segments**

- OLD3

**Inspection Points**

INSPECTION\_RATING

- <Null>
- U
- M
- A
- NA

**Inspection Lines**

INSPECTION\_RATING

- <Null>
- U
- M
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- NA

- Lock
- Pump Station
- Interim Control Structure
- Federal Water Control Structure
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- Weir
- Control Structure
- Diversion Structure
- Drainage Structure
- Navigable Structure

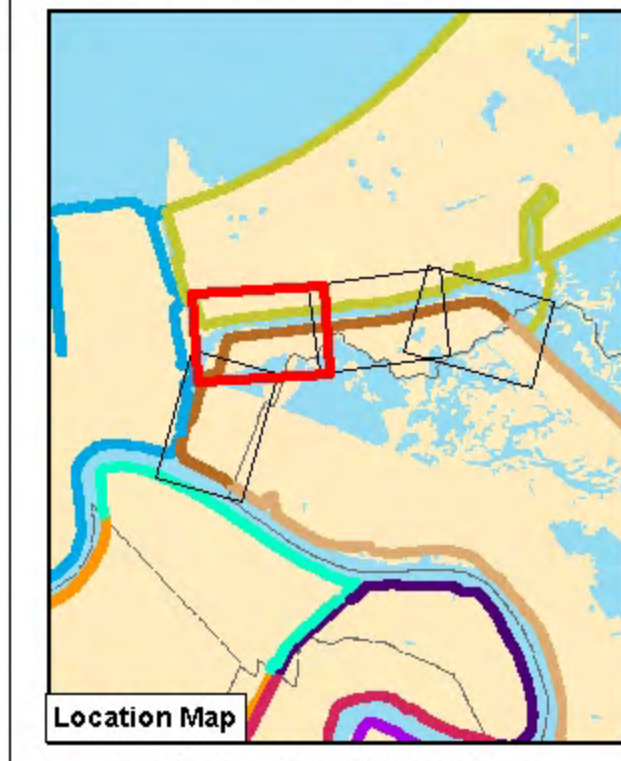
**Parishes Boundary**

- River Miles

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Notes:  
Inside Plan Area grid based on Louisiana State Plane System, South Zone North American Datum 1983 shown by dashed ticks. Geographic Projection shown by solid ticks.

Last Modified : 7/7/2017



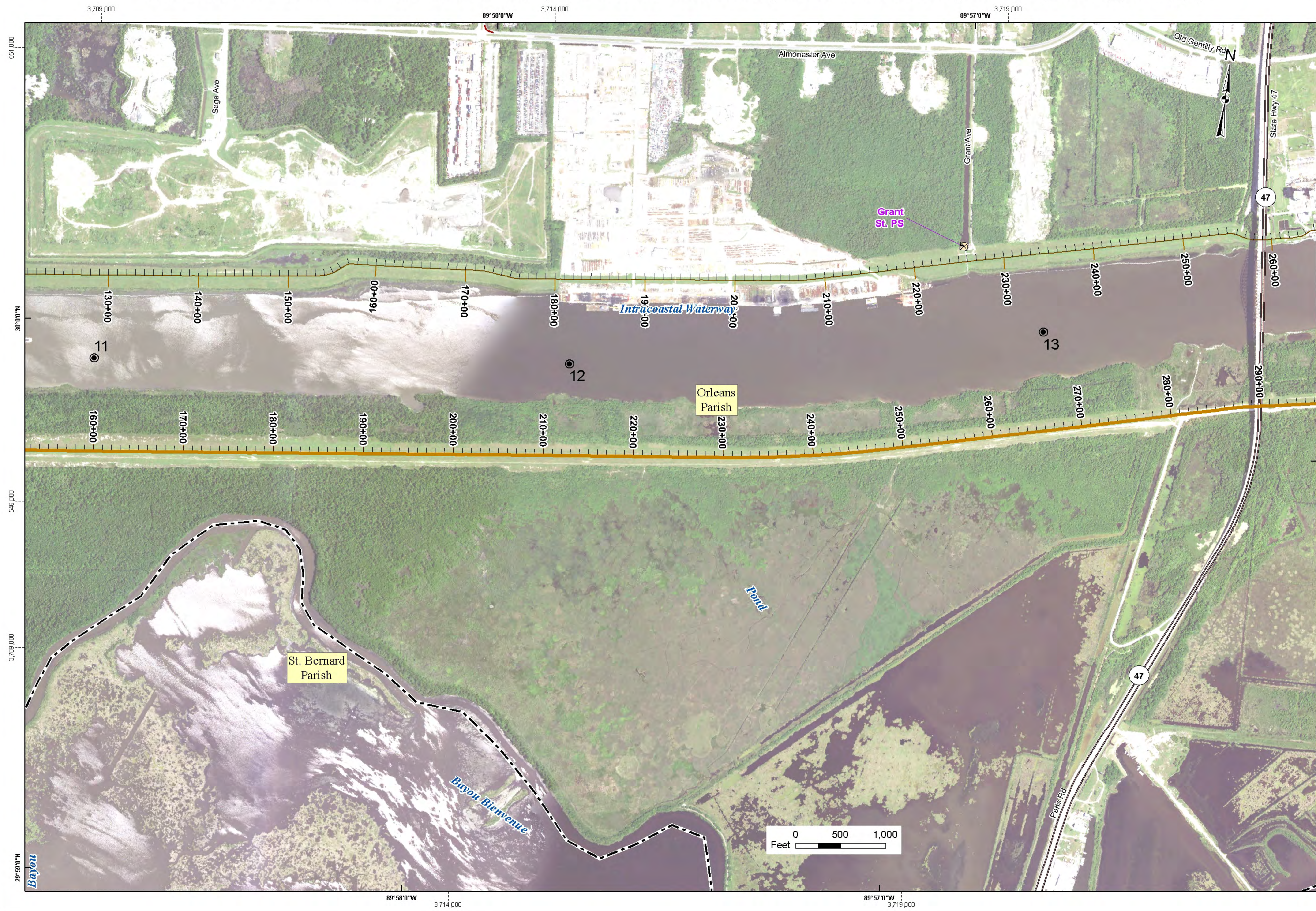
**O&M Routine Inspection**

OLD3 - Orleans LD - New Orleans East Bank (St Bernard Subbasin)

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# Orleans LD - New Orleans East Bank (St Bernard Subbasin) 2017 routine inspection (OLD3\_2017\_a)



**Legend**

**Flood Control Segments**

- OLD3

**Inspection Points**

INSPECTION\_RATING

- <Null>
- U
- M
- A
- NA

**Inspection Lines**

INSPECTION\_RATING

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- M
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- Control Structure
- Diversion Structure
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- Navigable Structure

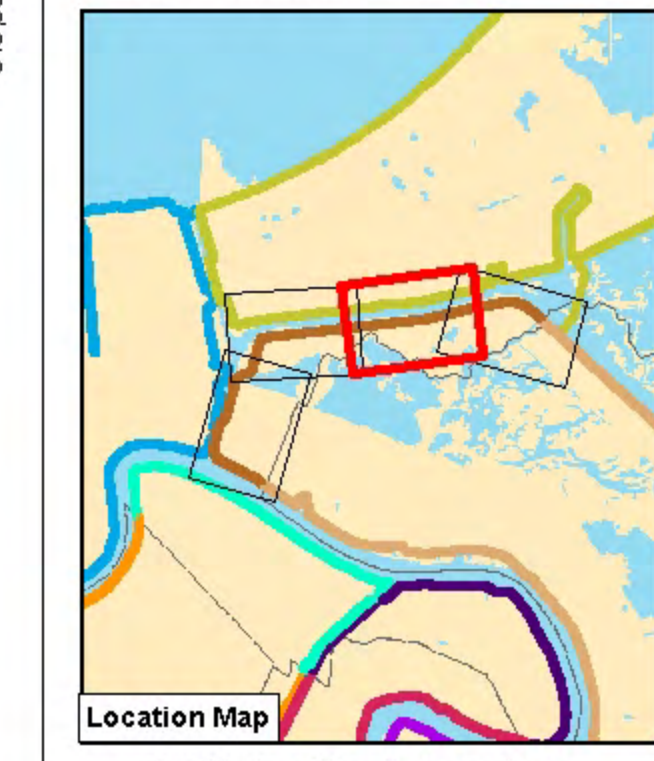
**Parishes Boundary**

- River Miles

Note:  
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Notes:  
Inside Plan Area grid based on Louisiana State Plane System, South Zone North American Datum 1983 shown by dashed ticks. Geographic Projection shown by solid ticks.

Last Modified : 7/7/2017



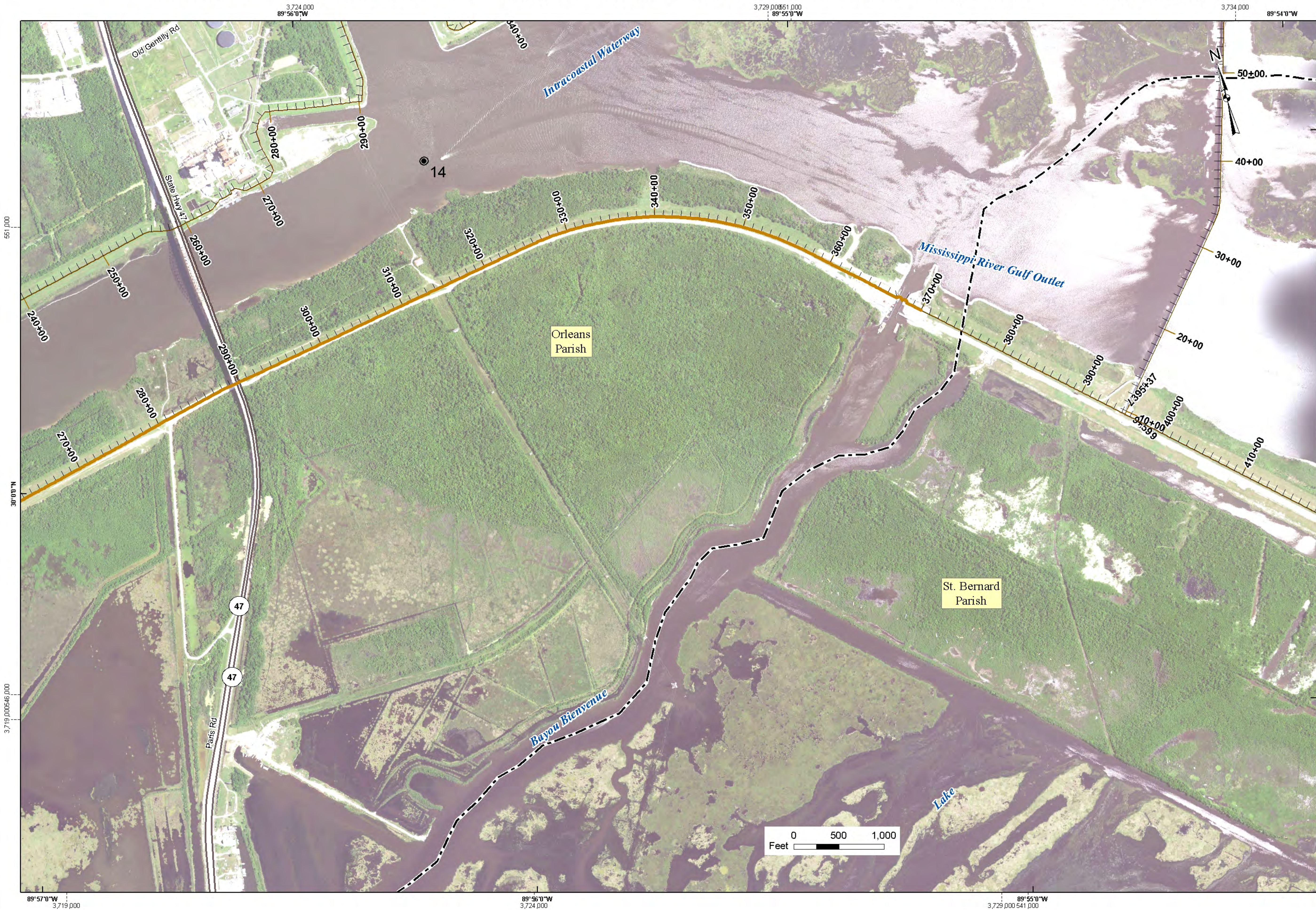
**O&M Routine Inspection**

OLD3 - Orleans LD - New Orleans East Bank (St Bernard Subbasin)

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# Orleans LD - New Orleans East Bank (St Bernard Subbasin) 2017 routine inspection (OLD3\_2017\_a)



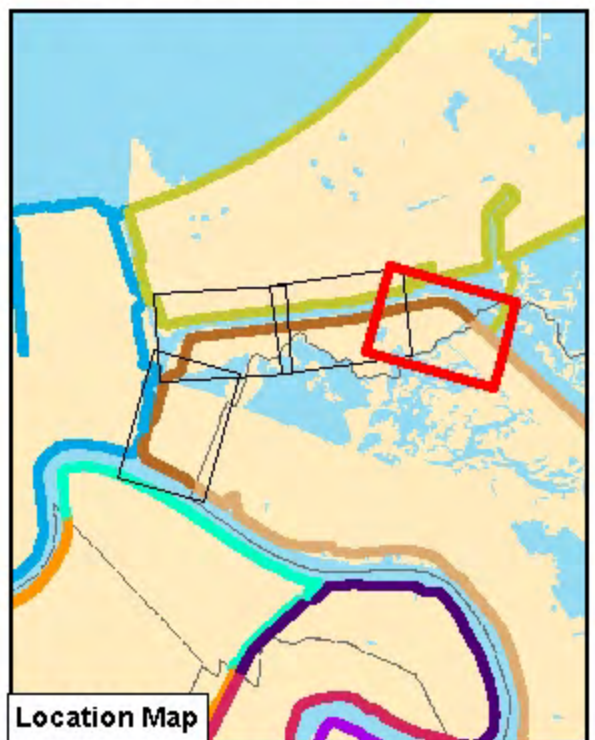
## Legend

- Flood Control Segments**
- OLD3
- Inspection Points**
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- Inspection Lines**
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Notes:  
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Last Modified : 7/7/2017



## O&M Routine Inspection

OLD3 - Orleans LD -  
 New Orleans East Bank  
 (St Bernard Subbasin)